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NOTE ADDED IN PRESS: While this manuscript was in press we have collected the following additional information. First, a photo showing the green form of *Cucullia montanae*'s larva upon *Grindelia integrifolia* D.C. taken by Jeremy B. Tatum, B.C., Canada, is available on the web site entitled "Butterflies and moths of Southern Vancouver Island" at the address: http://alpha.furman.edu/~snyder/snyder/lep/intern.htm. This is, to our knowledge, the first photograph of *Cucullia montanae*'s larva ever published. It also confirms the identity of the main food-plant. Second, according to M. Hreblay and L. Ronkay: "The palearctic *Cucullia ledereri* Staudinger 1892, known from Kamchatka by its holotype female only", has for "closest relative *Cucullia similaris* 1892, they may represent two different populations of the same species!" This quote is from Moths of Nepal. Part 5. Tinea. Vol. 15 (supplement), pp. 174–175. *In* Tashiro Haruta (ed.). The Japan Heterocerist's Society, Tokyo, 1998. A similar view concerning the relationship between the two species is given in the Illustrated catalogue of Noctuidae in Korea by V. S. Kononenko, S. B. Ahn, L. Ronkay, Insects of Korea, Series 3, Park Kyu-Tek, Korea 1998. It will be interesting to find the male and the larva of *Cucullia ledereri* in order to know if they show any significant differences with *Cucullia similaris*.

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NOTES ON THE COMMON PALM BUTTERFLY, *ELYMNIAS HYPERMNESTRA UNDULARIS* (DRURY) (SATYRINAE) IN INDIA

Additional key words: Genitalia, toothed brachia, angular appendices, signa, genital plate.

Hemming (1967) clarified that *E. jynx* Hübner (=*Papilio undularis* Drury) is the type-species of the genus *Elymnias* Hübner, which remained without a valid type-species for some time (Hemming 1943). Unlike other satyrines, palm butterflies often are brightly colored and generally resemble danaines, which they mimic in one or both the sexes. According to Bingham (1905), Evans (1932), Talbot (1947), Pinratana (1988), and Corbet and Pendlebury (1992), the species referable to the genus *Elymnias* differ from other satyrine genera in having a hind wing prediscoidal cell. Of the eleven species from India, three, i.e., *E. hypermnestra* (Linnaeus), *E. malelas* (Hewitson), and *E. patna* (Westwood), have been reported from Northwest India. However, in recent surveys, only *E. hypermnestra* could be located and reexamined. This reexamination revealed that the male and female genitalia possess certain unique taxonomic characteristics. The genitalia are described here, along with remarks on the distribution of the species.

Elymnias hypermnestra undularis (Drury)

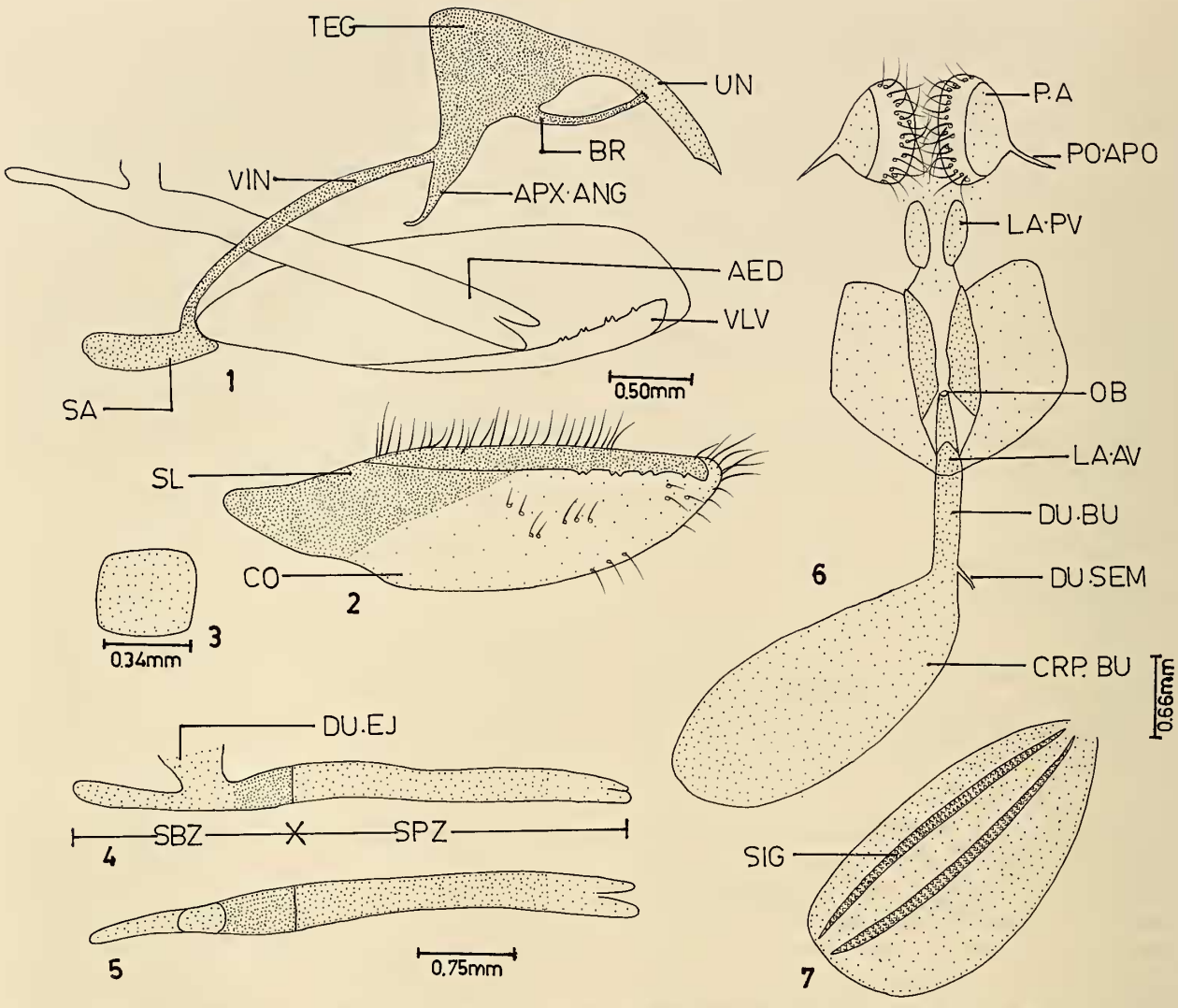
Male genitalia (Figs. 1–5). Uncus long, slightly curved, longer than tegumen, distal end sharply pointed; brachia very thin, long, slender, upwardly turned, distal end with minute teeth, strongly sclerotized; tegumen broader dorsally, narrower ventrally; appendices angulares long, broad proximally, narrow, hooked distally; vinculum much longer than tegumen, slightly curved inwardly, broader in the middle; saccus short, tubular, distal end rounded; valva somewhat boat-shaped, costa and sacculus not demarcated, harpe strongly sclerotized, narrow, knife-like, with inner margin dentate, pilose; juxta squarish plate-like, weakly sclerotized; aedeagus tubular, slightly squeezed in the middle, subzone smaller than suprazone, ductus ejaculatorius entering dorsad.

Female genitalia (Figs. 7, 8). Corpus bursae cylindrical, membranous; signa represented by two scobinate patches which run along whole length of corpus bursae; ductus bursae moderately long, broader anteriorly, narrower posteriorly; ductus seminalis originate from ductus bursae near base of corpus bursae; central process of lamella antevaginalis very small, roughly triangular, lateral flaps long, membranous except on their inner margin; lamella postvaginalis reduced, with small oval plates; apophyses anterioris wanting; apophyses posterioris moderately long, slender, membranous; papilla analis guttiform, pilose.

Length of forewing. Male: 34.0–36.0 mm (n = 10); Female: 40.0–42.0 mm (n = 5).

Material examined. Himachal Pradesh: 4 ♂, 3 ♀, 1.xi.91, Paonta Sahib, 850 m, Sirmaur. Assam: 2 ♂, 2 ♀, 8.v.95, Vasistha, 213 m, Guwahati. Sikkim: 2 ♂, 30.ix.95, Rangpo, 600 m; 2 ♀, 4.x.95, Jorethang, 630 m.

Remarks. Among fifty-four satyrine species for which the male genitalia have been examined, certain structures, such as toothed brachia and angular appendices, are unique to *E. hypermnestra*. Similarly, the female genitalia have a unique signa and genital plate, both conspicuous structures not encountered in any other satyrine examined so far. The account of the male and the female genitalia are described for the first time.



FIGS. 1–7. *Elymnias hypermnestra undularis* (Drury). **1,** Male genitalia (lateral view). **2,** Valva (inner view). **3,** Juxta. **4,** Aedeagus (lateral view). **5,** Aedeagus (dorsal view). **6,** Female genitalia (ventral view). **7,** Corpus bursae (dorsal view). Abbreviations: AED: Aedeagus, APX.ANG: Appendix angulares, BR: Brachium, CO: Costa, CRP.BU: Corpus bursae, DU.BU: Ductus burse, DU.EJ: Ductus ejaculatorius, DU.SEM: Ductus seminalis, LA.AV: Lamella antevaginalis, LA.PV: Lamella postvaginalis, O.B: Ostium bursae, P. A: Papilla analis, PO.APO: Apophysis posterioris, SA: Saccus, SBZ: Subzonal portion of aedeagus, SIG: Signum, SL: Sacculus, SPZ,: Suprazonal portion of aedeagus, TEG: Tegumen, UN: Uncus, VIN: Vinculum, VLV: Valva.

In addition to the genitalic characteristics, it is observed that the hind wing prediscoidal cell has an additional prominent vein. An obscure black androconial patch near the base of the forewing space 1A+2A, above, reported for *E. hypermnestra* (Corbet & Pendlebury 1992), is lacking in *E. hypermnestra undularis*. As well, there is a nacreous area on the forewing underside and another on the dorsal surface of the hind wing costal margin, which also has a pair of hair tufts, all of which agree with the observations made by Pinratana (1988) and Corbet and Pendlebury (1992).

Mackinnon and de Niceville (1897), while reporting on this species from North West India (Mussoorie and Dehradun, below 909 m ASL) remarked that it is not a common species in this area. Though no specimens could be collected from the localities mentioned above, four males and three females were collected from Paonta Sahib (399 m ASL), forty-two kms from Dehradun. Marshall and de Niceville (1883) reported that *E. undularis* is the common *Elymnias* in North West India, where it is found in the warm valleys of the outer Himalayas as far east as Mussoorie. Contrary to Wynter-Blyth (1957), our surveys indicate that the species is not common in North India. Females mimic *Danaus plexippus* (Linnaeus) and *D. chrysippus* (Linnaeus) at the above mentioned localities.

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OXYPOLIS RIGIDIOR, A NEW LARVAL FOOD PLANT RECORD FOR *PAPILIO POLYXENES* (PAPILIONIDAE)

Additional key words: black swallowtail, Wisconsin.

Oxypolis rigidior (L.) Raf. is yet another larval food plant in the family Apiaceae for *Papilio polyxenes* Fabr. (Papilionidae). This Nearctic swallowtail has long been known to develop on various native and exotic species in Apiaceae now found in its range (Scudder 1889, Scott 1986). The genus *Oxypolis* has been reported in this context, with *O. filiformis* (Walt.) Britt. (Tietz 1952) and *O. canbyi* (Coult. & Rose) Fern. (Scott 1986) included in lists of suitable food plants. These two species grow in the southeastern United States (Mathias & Constance 1944–45). *Oxypolis rigidior* is a native species that grows in swamps, marshes, ditches and wet prairies from coastal New York to Minnesota, south to Florida and Texas (Gleason & Cronquist 1991).

Fifteen caterpillars were collected from *O. rigidior* inflorescences bearing young fruits. These included second, third and fourth instars, taken at 3 sites in Grant, Juneau and Marquette Counties, in southern Wisconsin, in early September, 1999 and 2001. These sites support native, wet prairie vegetation as defined by Curtis (1959). Caterpillars were reared to pupation on developing fruits of *O. rigidior* in the lab; though foliage was also provided, it was scarcely eaten. Pupae were caged in a garage over winter and then returned to the lab. One caterpillar died, 2 pupae died, 10 pupae each yielded single adults of *Trogus pennator* (Fabr.) (Ichneumonidae) and 2 pupae yielded adults of *P. polyxenes asterius* Stoll.

The exotics *Daucus carota* L. and *Pastinaca sativa* L., both ubiquitous along roadsides throughout southern Wisconsin, are also suitable to these larvae (Scudder 1889). I have reared Wisconsin larvae, taken off these plants, on their foliage. In response to roadside mowing, these exotics may provide forage well into autumn. But in the historically natural regime of these wet prairies, *O. rigidior* provides forage later in the year than do other suitable native plants on these 3 sites—*Cicuta maculata* L., *Heracleum lanatum* Michx., *Sium suave* Walter and *Zizia aurea* (L.) Koch. (Scott 1986).

Voucher specimens are in the Insect Research Collection of the University of Wisconsin–Madison. I thank Dan Young and Mike Anderson for donating space in which rearing could be done, John Luhman for determining the wasps and J. Mark Scriber and an anonymous second reviewer.